San Francisco Bay/Sacramento-San Joaquin Delta Estuary

Background

The San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Delta) is the hub of California's water supply system. The Delta is formed by the confluence of the state's two largest rivers: the Sacramento flowing south from its headwaters near Mt. Shasta and the San Joaquin flowing north from its origins high in the southern Sierra Nevada. The 1100 square mile Delta is a web of 60 reclaimed islands (protected by earthen levees) and approximately 700 miles of waterways. The Delta watershed drains nearly 50% of the state's runoff and supports 80% of California's commercial salmon fishery. The Delta is important habitat for fish, wildlife, and waterfowl, including several threatened and endangered fish species.

Pumps in the south Delta operated by the State and federal government divert 20 to 70% of natural flow to the Central Valley and Southern California. The Delta supplies a portion of the drinking water for 24 million Californians and water for more than 1,800 agricultural users who produce half the nation's fruits and vegetables. Water that is not diverted in or upstream of the Delta flows through San Francisco Bay to the Pacific Ocean.

EPA has long been involved in efforts to protect and restore Delta water quality. One of the more ambitious was the CALFED Bay Delta Program, a state-federal partnership initiated in 1995 (following the Bay Delta Accord and EPA's promulgation of Delta water quality standards) to address water management and ecosystem protection in the entire watershed. Having come to the end of its first phase (2000-2007) of a 30-year program and having spent over $3 billion, CALFED lost much of its legislative and public support in the face of the Delta's ecosystem decline. In response, in 2006, then-Governor Schwarzenegger commissioned a blue-ribbon panel which published a "Delta Vision Strategic Plan", containing many of the same recommendations as the CALFED Program, including a recommendation to pursue a water conveyance facility around the Delta (i.e., peripheral canal). As Delta Vision was a State-led effort, EPA's contribution was limited to presenting scientific findings to the panel related to the Delta fisheries decline.

The ecosystem saw a dramatic decline in a number of fish populations beginning in 2001, including both endangered species and sport fisheries. EPA played a key role, working with the Interagency Ecological Program, in a new and broad scientific effort to identify causes of the crash. The POD investigation is in its 7th year and has been supported by over $30 million in State and federal monies.

A three year drought (2007-2010) exacerbated water supply and fishery conflicts and intensified endangered species litigation related to water project operations. These issues, plus the ongoing risks posed by levee instability, increasing urbanization, climate change and earthquakes led State policy makers to initiate new processes to "fix the Delta". In 2009, the State enacted legislation which, among other things, adopted "coequal goals" of a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. In addition, the Delta Stewardship Council was created and charged with developing a Delta Plan (by January 2012) to achieve these goals.

Interagency activities

Interim Federal Action Plan (IFAP): The Obama administration has reinvigorated the federal government's engagement with the State to address both water supply and ecosystem issues. In response to the most recent drought and the conflicts it created in California water management, EPA joined five other federal agencies in signing an MOU in September 2009, and subsequently issuing the Interim Federal Action Plan in December 2009, to describe actions each agency would take to address the many interrelated water issues, in partnership with the State of California. Among other things, EPA committed in the IFAP to "assess the effectiveness of the current regulatory mechanisms designed to protect water quality in the Delta and its tributaries, including standards for toxics, nutrients, and estuarine habitat protections."

Bay Delta Conservation Plan: In 2006, the major water districts dependent on the Delta began a Habitat Conservation Planning effort (the Bay Delta Conservation Plan, or BDCP) with the California Departments of Water Resources and Fish & Game, the U.S. Department of Interior (FWS and BOR) and NOAA-Fisheries to address endangered species concerns and seek water supply assurances. The BDCP will propose new conveyance to shift most diversions from the south Delta to the north Delta in an attempt to reverse the decline of several beneficial uses and add stability to water operations. The State and Federal agencies are preparing a DEIR/S on the BDCP; EPA is a cooperating agency. The DEIR/S has an ambitious schedule, calling for public release in mid-2012. EPA has been providing input to ensure that key water quality issues are adequately considered in the analysis of alternatives. We are also developing an MOU with the Corps of Engineers and the lead BDCP agencies integrating CWA 404 permitting steps into the overall BDCP process.

San Joaquin River Restoration: In 2009, Congress enacted legislation directing restoration of the San Joaquin River from Friant Dam to the confluence of the Merced River, to implement the historic agreement reached by water users and environmental groups in 2006. Restoration of such magnitude has ramifications for Delta water management. In 2011, the Bureau of Reclamation issued a DEIS for this program. EPA is a cooperating agency and is working to both leverage the effort for improved water quality monitoring as well as ensure the downstream water quality regulatory regime supports the planned reintroduction of fisheries.

Other EPA activities

Clean Water Act implementation: EPA is supporting the State and Regional Water Boards as they address a number of water quality and habitat degradation concerns, through water quality standard changes, permit amendments, TMDLs, etc. In 2008, the Water Boards developed a Bay Delta Strategic Workplan, articulating their ongoing efforts, as well as new work deemed necessary to address the Delta ecosystem decline. Several key actions have been taken; others lag. In 2011, EPA issued an Advanced Notice of Proposed Rulemaking to lay out the key Delta water issues and their current regulatory framework. A follow-up report will be issued in late 2011 synthesizing public input and recommending priority actions. Recommendations will include EPA issuance of a new site-specific selenium water quality criteria for San Francisco Bay and Delta.

For example, ammonia discharges from wastewater treatment plants combined with low and constant flow regimes appear to have favored the spread of toxic blue-green alga, invasive clams and jellyfish over the former highly-valued fish community. In 2010, the Regional Water Board amended the NPDES permit for their largest POTW to add ammonia removal. Additional work is underway, including a review of water quality standards in the Delta to protect estuarine habitat and fish migration.

Monitoring: There currently is no coordinated system for collecting and managing water quality data for the Delta and the Central Valley. EPA has been an advocate for a system similar to those in the Bay and on the South Coast in order to improve the quality, efficiency, access and use of information for planning and management. There are three monitoring initiatives that together cover the full Bay-Delta watershed: the Delta Regional Monitoring Program (directed by the Central Valley Regional Board); the Sacramento River Watershed RMP, initiated a decade ago through EPA earmarks; and the San Joaquin Basin Monitoring Strategy (underway through an EPA grant, in conjunction with the Regional Board). Technical coordination comes through shared support of the State's Surface Water Ambient Monitoring Program. All three efforts have inventoried existing monitoring and are aligning monitoring and assessment within the Delta watershed to address key issues.

Upcoming issues
EPA will play some role in several key decisions that are under consideration by various state and federal agencies, as well as members of the State legislature and Congress:

- In the near-term, what additional regulatory requirements under ESA and/or the CWA are needed to reverse the decline of pelagic and salmonid species?

- In the long-term, how much water can be sustainably conveyed from north to south either through the Delta and/or through new conveyance facilities around the Delta?

- Given concerns regarding impacts within the Delta and upstream of poor San Joaquin River water quality, can CWA tools, such as water quality standards and TMDLs, be used in coordination with the San Joaquin River Restoration Program to make San Joaquin River flows and water quality benefit the Delta?

- Given the changing weather and Sierra runoff patterns, what new storage is needed, how ought it be operated and who ought to pay for it?

- Should urban development continue to be permitted below sea level, given the Delta's vulnerable levee system, and the risk of flooding, earthquakes and sea level rise?

Key Message
EPA has a long history in efforts to protect and restore Delta water quality. We will continue to work cooperatively with our agency partners and stakeholders to restore this critical ecosystem while recognizing the competing needs of all stakeholders. Our activities will continue to support the efforts of the State and Regional Water Boards. As a participant in the BDCP

process, we will continue to work with the fishery agencies to ensure an integrated approach (CWA and ESA) to water quality restoration.

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